

REMARKS

Status of the Claims

Claim 1 has been amended to recite “establishing a pressure at the inlet to the reactor unit of from ~~0.4 to 2 MPa abs~~ 0.6 to 1 MPa abs.” Support for this amendment can be found on page 6, lines 13-15 of the originally filed application (paragraph [0025] of the application as published). Claim 7 has been amended to recite “A process as claimed in claim 1, wherein the heterogeneously catalyzed gas phase oxidation is carried out in the presence of a volatile phosphorus compound.” Support for this amendment can be found in claim 7 of the originally filed application. Other claim amendments were made for the purpose of clarification and format, and to remove multiple claim dependency. Claims 4, 15, and 16 have been canceled. No new matter has been added.

Rejection Under 35 U.S.C. § 112, Second Paragraph

Claim 7 was rejected under 35 U.S.C. § 112, second paragraph “as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The first part of the amended claim 7 has been omitted.” (Office Action, page 2).

Claim 7 has been amended to recite “A process as claimed in claim 1, wherein the heterogeneously catalyzed gas phase oxidation is carried out in the presence of a volatile phosphorus compound.” Accordingly, applicants submit that this rejection has been overcome.

Rejection Under 35 U.S.C. § 103(a)

Claims 1-20 have been rejected under 35 U.S.C. § 103(a) as “being unpatentable over Ruggieri et al, EP 0 690 040 A1.” (Office Action, page 2). According to the Examiner, Ruggieri “discloses the instant process, except that the total concentration of n-butane passed over the catalyst ranges from 1.6% to 3.0% by volume” whereas “the instantly claimed range . . . is 0.5 to 1.5% by volume.” (*Id.*) Nonetheless, the Examiner asserts that “it would have been obvious, in order to insure safer, higher selectivity operation, to the ordinary worker in the art to perform the process at a lightly lower n-butane concentration.” (*Id.*)

Without acquiescing to the Examiner's rejection, Applicants have amended claim 1 to recite "establishing a pressure at the inlet to the reactor unit of from ~~0.4 to 2 MPa abs~~ 0.6 to 1 MPa abs." In contrast to this amended claim, Ruggieri et al. teach applying a reactor inlet pressure of 2.03 to 6.08 bar (equal to 0.203 to 0.608 MPa) (Ruggieri et al., page 3, line 41), and preferably at an inlet pressure of 3.55 bar (equal to 0.355 MPa) (Ruggieri, et al., Examples 1 and 2).

Accordingly, in order for a person of skill in the art to arrive at Applicants' claimed invention they would at least be required to modify the teachings of Ruggieri et al. to: (1) reduce the n-butane concentration from 1.6% to 3.0% (preferably 2.1%, see Ruggieri et al., see table on pages 3 to 4 of Ruggieri et al.) down to 0.5 to 1.5%, and (2) increase the reactor inlet pressure from 0.203 to 0.608 MPa (preferably 0.355 MPa) to 0.6 to 1 MPa. However, nothing in the disclosure of Ruggieri et al. teaches or suggests making this series of modifications.

To the contrary, Ruggieri et al. teach away from increasing the reactor inlet pressure. In particular, Ruggieri et al. emphasize that operating under the parameters of their disclosed process saves electric power, particularly in the compression step (Ruggieri et al., page 4, lines 10 to 20). Accordingly, a person having ordinary skill in the art would not be motivated to modify the teachings of Ruggieri et al. in order to operate at an increased pressure, since this would increase compression cost, thereby directly negating a key expressed advantage of Ruggieri et al. This is especially true when one considers that the *low* end of the reactor inlet pressure of amended claim 1 (0.6 MPa) is nearly *double* the pressure preferred by Ruggieri et al. (0.355 MPa).

Moreover, applicants submit that a person having ordinary skill in the art would not be motivated to modify the process of Ruggieri et al. in order to operate within Applicants' claimed n-butane concentration range because operating the process disclosed in Ruggieri et al. at that concentration range would result in a substantially lower maleic anhydride yield. Accordingly, for this additional reason, Applicants submit that amended claim 1 is not obvious in view of Ruggieri et al.

In view of the above amendments, applicant believes the pending application is in condition for allowance.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 22-0185, under Order No. 12810-00191-US1 from which the undersigned is authorized to draw.

Dated: April 17, 2007

Respectfully submitted,

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